IN THE SPECIFICATION:

Kindly amend the specification as follows:

On page 1, line 2, after " 2003" kindly insert --which is incorporated herein by this reference.--

This portion of the specification should read as follows:

This application claims the benefit of U.S. Provisional Application No. 60/465,457 filed on April 25, 2003 **which is incorporated herein by this reference.**

IRRIGATION CONTROLLER WATER MANAGEMENT

WITH TEMPERATURE BUDGETING

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On page 4, line 5, (published paragraph [0010]) kindly delete the words " sensors data" and replace them with --sensors' data--.

The paragraph where this amendment is made should now read as follows:

Soil moisture sensing devices and other methods of water conservation, have been available for decades, but have enjoyed only limited success. Such devices and methods generally call for inserting moisture sensors into the soil to measure the soil moisture content. Newer soil moisture sensing technologies have more recently been developed, and claim to be theoretically accurate in measuring plant water needs. However, regardless of the level of

technology, such devices and methods are often problematic due to the location and number of sensors necessary to obtain accurate soil moisture readings, the high costs of installing and maintaining the sensors, and the integrity and reliability of the **sensors' data**.

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On page 10,lines 7-8, (published paragraph [0046]) kindly delete the words "Such conversion method comprised of" and replace them with --This conversion method comprised--.

The paragraph where this amendment is made should now read as follows:

Another ET-to-irrigation-time conversion method, the 'deficit irrigation practice,' was proposed by the IA Water Management Committee in Appendix G of its October 2002 article entitled "Turf and Landscape Irrigation Best Management Practices." ~~Such conversion method comprised of~~ **This conversion method comprised** ten separate formulas, and utilized a total of twenty-nine variables and constants, not including those utilized in calculating the ET value. Many of these variables represented concepts and relationships difficult for the average irrigation designer, much less a consumer, to understand, such as: the local landscape coefficient for the particular vegetation; available water depending upon the particular soil composition; allowable water depletion rate from the root zone; maximum percentage allowable depletion without plant stress; the water management factor necessary to overcome water management inefficiency; the whole day stress-based irrigation interval; water flow rates for the particular

system; and, of course, ET.

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On page 22, line 7 (published paragraph [0089]) kindly delete the words "other ET, formula" and replace them with --other ET formula,--.

The paragraph where this amendment is made should now read as follows:

Furthermore, the present invention is advantageous over the Penman-Monteith, or any ~~other ET, formula~~ **other ET formula,** in that it reaches similar irrigation time values without relying upon the numerous variables and relationships of the ET theory, or a subsequent calculation of irrigation time settings. Instead, the present invention utilizes only two variables – ambient temperature and the extraterrestrial radiation factor. Given this relative simplicity, and its intuitive approach, the present invention is much more likely to be adopted by the general public.

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On page 23, lines 17 and 18 (published paragraph [0092]) kindly delete the numeral "10" and it with --10'-- (in two places).

The paragraph where this amendment is made should now read as follows:

Fig. 3 depicts an alternative housing for the irrigation controller 10' of the present invention. Here, it can be seen that the main body of the irrigation controller 10' (comprising the remotely-programmable input device 11, antenna 12, microprocessor 13, first 14 and second 15 data storage devices, and battery 16, none of which are depicted in this particular figure) is placed above ground level A. The temperature sensor 17' and optional precipitation sensor 18' may be incorporated with controller 10' and mounted, for example on top of the pipe as shown. Instead, these sensors are mounted above ground level A, and in communication with the irrigation controller 10' by wired means. The controller housing 20 (which may be a common PVC pipe) encloses and protects the controller [[10]] **10'** from the environment. The wires from the controller [[10]] **10'** to the cutoff switches (valves) 19 extend out of the housing 20 to the valves located in the field. It is to be understood that communications between sensors 17' , 18' and the controller 10' may also be accomplished using wireless means by adding an antenna 21 to the sensors 17' , 18' and the controller body 10' , and placing the sensors in wireless communication with the irrigation controller 10' .

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On page 24, line 9 (published paragraph [0095]) kindly delete "(TAMAX)" and replace it with --TSMAX--.

The paragraph where this amendment is made should now read as follows:

The operator then configures the irrigation controller (step 40). This is done by entering the current time (e.g., month, and/or day and/or year) (step 41). The operator also enters the expected maximum summer temperature ~~(TAMAX)~~ **(TSMAX)** and may enter the date of such temperature (step 42). The operator then provides the latitude for the geographical area (step 43a), if known. If the latitude is unknown, the operator may instead enter the zip code (step 43b) or some other geographical information (e.g., city, county, state, country, etc.) which the microprocessor 13 may use to obtain the latitude for the location from an appropriate lookup table within the first data storage means 14. The operator also enters a preliminary (summer) irrigation schedule having one or more run times (step 44). The operator may also enter the minimum system activation temperature (step 45). All of this information may be stored within the second data storage means 15.

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On page 26, line 9 (published paragraph [0100]) between "For" and "subsequent" kindly insert --a--.

The paragraph where this amendment is made should now read as follows:

The controller of the present invention then calculates the periodic temperature budget factor (PTBF) (step 60). Using temperature sensor 17, the controller 10 records the maximum temperature (T_{PMAX}) for a particular predefined period (step 61). These

temperatures are recorded by temperature sensor 17 on a periodic basis (e.g., hourly, daily, etc.), and stored within the second data storage device 15 until the end of the period. At the end of the predefined period, the microprocessor 13 calculates the PTBF using the maximum temperature (T_{PMAX}) for the period, and the current/present extraterrestrial radiation (RA_P) for the same period. The RA_P factor can be obtained or extrapolated from the chart (based upon the particular day, week, or month, as provided by the time-keeping function of the CPU) (step 62). For a subsequent period, the recorded high temperature for the previous period is replaced with the latest measured high temperature. If this is done on a daily basis, the previous high temperature is replaced with highest temperature recorded during the past 24 hours. To conserve controller memory, the RA_P chart could be stored monthly in increments of two degrees of latitude, as depicted in Fig. 6. The microprocessor 13 could then determine the PTBF, as follows: (step 63)

* * *

On page 30, line 6 (published paragraph [0112]) the temperature shown in the published application is "340 F." which should be --34° F.--

The paragraph where this correction is made should now read as follows:

The operator could also program the controller to suspend irrigation if the temperature at the beginning of an irrigation cycle is below the specified minimum temperature, or (if a precipitation sensor is included) if precipitation exists during, or before, an irrigation cycle. For example, assume that precipitation exists during the second watering irrigation time above. The precipitation sensor detects the existence of such precipitation, and communicates such existence to the controller, causing the controller to cancel the previously scheduled second watering duration of 1.5 minutes. Further assume that the minimum temperature is set at 35° F. Further assume that, at the beginning of the third irrigation time above, the current temperature was **34° F**. This would cause the controller to cancel the previously scheduled third watering duration of 1.5 minutes.

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